FIELD OVERSIGHT SUMMARY REPORT ACS NPL SITE GRIFFITH, INDIANA JUNE 24, 1997 - JULY 11, 1997

Letter of Transmittal Black & Veatch Special Projects Corp.

101 North Wacker Drive, Suite 1100, Chicago, Illinois, 60606, Phone (312) 346-3775, Fax (312) 346-4781

То:	Ms. Sheri Bianchin United States Environmental Protection Agency 77 West Jackson Boulevard (SRW-6J) Chicago, Illinois 60604	Date: 12-Sep-97 From: Steve Mrkvicka Project: American Chemical Services Project No.: 71670 File: C.3
We are sendin	g you: XXX Attached Under separa	te cover via
	Preliminary Report	Specifications
	Final Report	Change Order
XXX	Other: Field oversight summary report June 9, 1997, to July 30, 1997	Addendum
These items a	re transmitted:	
] As requested	XXX For your information
<u></u>	For your approval	For review and comment
Remarks:	Enclosed is the field oversight summary report for the field ac of the USEPA at the American Chemical Services NPL site, period from June 9, 1997, through July 30, 1997.	
ı	Please call me at 312/683-7849 if you have any questions.	
	American Chemical Services Work Assignment 80-5PJ7	
		A Section 1985
Сору То:	P. Hendrixson, USEPA (w/o enclosure); E. Howard, USEPA	(w/o enclosure)
Signed:	SMhL	12-Sep-97

USEPA/ARCS V BVSPC Oversight Summary

Reporting Period: <u>June 9 - July 30, 1997</u>	Hours Worked:	203
Site Name/Location: ACS/Griffith, IN	BVSPC Project No.	: <u>71670.600</u>
USEPA Work Assignment Manager: Sheri B	ianchin, RPM	
Project Manager: Steve Mrkvicka		

Personnel Summary Affiliation	No. of Personnel	Responsibility
Ben McGeachy, Lee Orsorz, Tom Blair, Sumant Ahuja, Srinivas Devulapalli, et al., Montgomery-Watson, Addison, IL	4-6	Respondent's General Contractor
Jeff Ramsby, Judy Knich, et al., Montgomery-Watson, Madison, WI	6	Field Sampling Crew (for quarterly groundwater sampling)
John Gandy, Foster Wheeler Environmental Corp., Columbus, OH	1	Barrier Wall Construction Quality Assurance & Quality Control
Don Justice, Mark Justice, Garnett McGurdy, Johnny Edwards, et al., Horizontal Technologies, Inc. Lake Alfred, FL (HTI)	10-12	Installation of Barrier Wall Alignment (bentonite slurry and HDPE) plus panels
Steve Field, Midwest Material Services, Columbus, OH.	1	Test Pit Excavation Oversight (contractor for Focus Environmental)
Midwest Dewatering, Hammond, IN	2	Hydro-jetting subcontractor (for BWES and MW-9 piezometers)
Don Spence, Kaldorn Excavating Co.	1	Heavy Equipment Operator (for test pit excavations)
Carter Helm, Steve Mrkvicka, Robert Lantz, et al., BVSPC	1-5	USEPA Oversight Contractor

Summary of field activities:

During the period covered by this field summary report, the following activities were undertaken by the Respondents at the American Chemical Service, Inc. (ACS) site:

- On June 10, 1997, several piezometer pairs were installed along the Barrier Wall Alignment.
- During the week of June 24, 1997, Montgomery Watson and their subcontractors conducted quarterly groundwater sampling.

- The Phase I (June 25 and 26, 1997) and Phase II (July 16 to 18, 1997) portions of the Pretreatment/Material Handling Study, including test pit excavation in the Offsite Containment Area.
- On July 11, 1997, HTI personnel, in conjunction with other support contractors, completed the Barrier Wall along the east perimeter of the alignment, then repaired gaps, tears, and other HDPE damage along the entire Barrier Wall Alignment.
- On July 30, 1997, Montgomery Watson began the MW-9 investigation in accordance with the June 13, 1997, Standard Operating Procedure.

BWES Piezometer Installation

On June 9 and 10, 1997, BVSPC was onsite to oversee the installation of several piezometer pairs along the Barrier Wall Alignment. Midwest Dewatering, the piezometer installation subcontractor, installed one piezometer inside the barrier wall and one outside the barrier wall. Pairs were installed along the northern and western sides of the BWES. The remaining pairs will be installed after the BWES site restoration activities are completed.

Quarterly Groundwater Sampling

During the week of June 24, 1997, three Montgomery Watson field sampling crews sampled approximately 63 monitoring wells within: the ACS site boundaries, the wetland delineation area, the City of Griffith Landfill, and the areas which lie north and east of the ACS site. EPA had requested Black & Veatch to split approximately 20% to 30% of the wells sampled. One Black & Veatch representative accompanied each sampling team to ensure that proper sampling techniques were conducted as well as the Revised SOP for low flow groundwater sampling was followed by each sampling team. The Black & Veatch representative also collected the appropriate EPA split sample. Another Black & Veatch representative maintained custody of previously collected samples which were stored and packaged at the Treatment Building. This Black & Veatch employee also did sample paperwork such as the chain of custody forms, custody seals, and sample tagging, in addition to the overview of Montgomery Watson sample paperwork procedures and their decontamination set-up and routine.

Black and Veatch, on behalf of EPA, collected the following split samples from the Upper Aquifer monitoring wells: MW-46, MW-11, MW-15, MW-37, MW-38, and MW-18. Split samples from the Lower Aquifer monitoring wells include: MW-50, MW-28, MW-23, MW-8, MW-51, and MW-10C. EPA split samples from the City of Griffith

Landfill include: M-1S, M-2S, M-3S, M-4S, and M-4D. Two equipment rinsate blanks collected by Montgomery Watson were also split by Black & Veatch to ensure that proper decontamination procedures produced clean sampling equipment. For laboratory QA/QC standards, Black and Veatch also collected the appropriate duplicate and MS/MSD samples per Region V SOP. Trip blanks accompanied each sample shipment.

Phase I Materials Handling Treatability Study

On June 25, and 26, 1997, five test pits were excavated within the Offsite Containment Area located south of the ACS facility and within the Barrier Wall Alignment. Ideally, the test pit contents would be representative of site soils and contaminants in the Offsite Containment Area. The contents once drained, would be used for material screening and thermal desorption treatability tests as outlined in the December 5, 1996 Pretreatment/Materials Handling Study Plan. Subcontractors included: Focus Environmental, Midwest Material Services, and Kaldorn Excavating.

Continuous air monitoring was conducted by Montgomery Watson and Midwest Material Services, they utilized the following equipment: Photoionization detectors (PIDs) to monitor volatile organic compounds in the breathing zone, draeger tubes (for benzene and vinyl chloride), and Summa canisters. Summa canisters are five gallon negative pressure, vacuum regulated containers which "collect" ambient air over an eight hour period. The air collected is then sent to a lab for analysis. A different set of Summa canisters were labelled and used for each test pit, one place upwind and one placed downwind during excavation activities.

On June 25, 1997, Test pits SA-04, SA-05, and SA-01 were excavated. Test pits SA-04 and SA-01 contained many full drums buried between 2.5 feet and 13.0 feet below land surface (bls). A back hoe with a high lift front end loader was used and, unfortunately, had breached many drums in the process of test pit content removal to a plastic-lined berm area next to each test pit (allowing for drainage back into the pit). Paint sludges of various colors, mineral spirits, toluene-based solvents, and some empty drums were noted. Digital photographs and videotape recordings were made by Montgomery Watson and Midwest Material Services. Many photographs were taken by Black & Veatch, and are included as part of this Oversight Report. Air monitoring of test pits 04 and 01 resulted in positive indications of benzene, and vinyl chloride, as well as high PID readings. No personnel were allowed downwind of test pits. Test pit SA-05, located 150 to 200 feet west of the other test pits, did not reveal drum burial, instead contained municipal wastes such as tires, burlap, wood and metal debris, wire, and plastic trash.

On June 26, 1997, Test pits SA-02, and SA-03 were excavated. Test Pit SA-02 also contained hundreds of drums which were damaged during excavation. An approximate one foot clay cover or cap was encountered below the surficial soils but above the drum burial. Air monitoring indicated the strong presence of benzene compounds, vinyl chloride, and high PID readings. Once the pit and raised contents of SA-02 were photographed and videotaped, the entire SA-02 area was covered with 6 mil plastic sheeting to prevent the unnecessary emission of vapors across the site and into surrounding neighborhoods. After Montgomery Watson consulted with Focus and PM, Peter Vagt, a decision was made to only "scrape" the top portion of test pit SA-03, in order to reduce volatile organic emissions, and prevent drum damaging. At 2 - 3 feet bls, positive identification of drum burial was made at SA-03 and excavation ceased. SA-03 lies between SA-04 and SA-02. It is likely that drum burial extends the entire length between SA-04 and SA-02.

Later in the day (June 26, 1997) all test pits were backfilled with the materials/drums which were removed from each respective pit with the exception of test pit SA-05. Test pit SA-05 contained municipal trash which could possible be screened for the materials handling study planned for a future date. The back hoe operator was directed to remove 3 to 4 times the volume from SA-05 then previously removed in order to have enough material for the future screening study. Note: using the contents from SA-05 for the pretreatment screening tests was later debated since it was not totally representative of subsurface materials within the Offsite Containment Area due to the multitude of buried drums.

Phase II Materials Handling Treatability Study

From July 16 to 18, 1997, Phase 2 of the Materials Handling Treatability Study work that was performed by Focus Environmental and Montgomery Watson. The work was performed in accordance with the July 11, 1997, work plan that described the additional activities that were to be done beyond the initial work performed in June 1997.

The objectives of the Phase 2 work included identifying areas containing a mixture of waste debris and contaminated soil that is representative of the material that could be segregated and thermally desorbed; determining the areal extent of the buried drums located in the Offsite Containment Area (OFCA); and collecting samples of the organic waste and contaminated soil for analysis and bench scale testing to assess treatability.

The work was performed by excavating trenches at the suspected perimeter of the drums buried in the OFCA. Additional test pits were excavated at locations believed to

be the best places to collect representative soil and waste. Samples were then shipped for analysis.

Completion and Repair of the Barrier Wall Alignment

During this three week reporting period, HTI had completed the trenching, slurry wall placement and HDPE poly liner placement between Stations 2 + 00 and 43 + 00, along the eastern boundary of the Barrier Wall Alignment. This final leg included crossing the railroad tracks southeast of the ACS facility office. Many problems were encountered such as improper release of the HDPE liner spool rod causing tears in the liner; many rocks encountered during trenching activities once again plagued the HTI crew and resulted in downtime to allow cutting teeth replacement and other associated repairs within the trench box; utility lines and piping had to be crossed near the ACS office which was also time consuming.

During the week of July 7, 1997, HTI completed the Barrier Wall perimeter enclosure then preceded to repair (or continued repair on) six gaps before proper closure could be achieved. Some of these gaps have also been previously worked on but final extrusion welding needed to be conducted. Gaps at the following Stations were repaired during this reporting period: 0 + 70, 2 + 00, 4 + 70, 6 + 00, 9 + 00, and 11 + 75.

HDPE panels were used to close gaps and were attached to the existing Barrier Wall poly liner by large clothespin-like devices with a hook and groove connection system patented by HTI. Some gaps required up to three panels for proper closure while smaller gaps required only one panel. Hydrophilic string and tape was used in all seams and hook and groove connections allowing for an optimum seal. High pressure hydrojetting bars located at the bottom of the panels helped clear obstructions within the slurry to properly place panels into the confining clay layer.

During panel lowering, HTI personnel ensured proper panel placement and seal by utilizing the "bullet test". A metal slug attached to a cord was simultaneously pushed by the hook inside the groove until the panel was properly seated in the clay, 20 - 30 feet bls depending on the location. If the bullet stopped moving during the lowering of the panel, the HTI crew knew the panel was off track or damaged and would have to be replaced. The bullet test failed approximately six times during the three week reporting period. New panels were fabricated in the HTI warehouse located off Reder Road, conveniently located within a half mile of the ACS site. A flat bed truck was used to transport these HDPE panels between the fabrication warehouse and the various Barrier Wall gap locations.

At 1911 on July 11, 1997, the final HDPE panel was successfully lowered into place at Station 2 + 00 thereby satisfying the closure requirements of the Barrier Wall Alignment at the ACS site.

MW-9 Investigation

2001 01

On July 30, 1997, Montgomery Watson began the MW-9 investigation in accordance with the June 13, 1997, Standard Operating Procedure (SOP). The subcontractor, Midwest Dewatering, installed two piezometers adjacent to MW-9. After the piezometers were installed, a dye tracer (Rhodamine WT) and an ionic media (chloride) was injected into MW-9. According to the SOP, Montgomery Watson will test samples collected from the piezometers for the presence of the dye and ionic media. A sampling schedule was included in the SOP.

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8	/_/ // /		Date.	/ 02 //

0-9-97 SMLL

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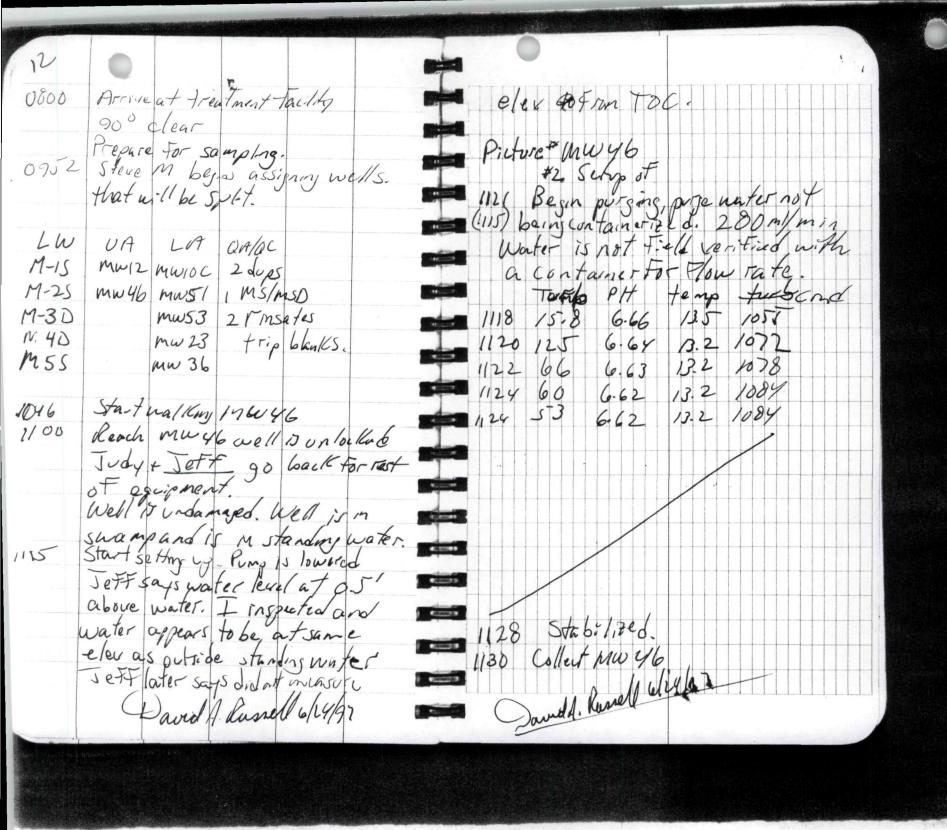
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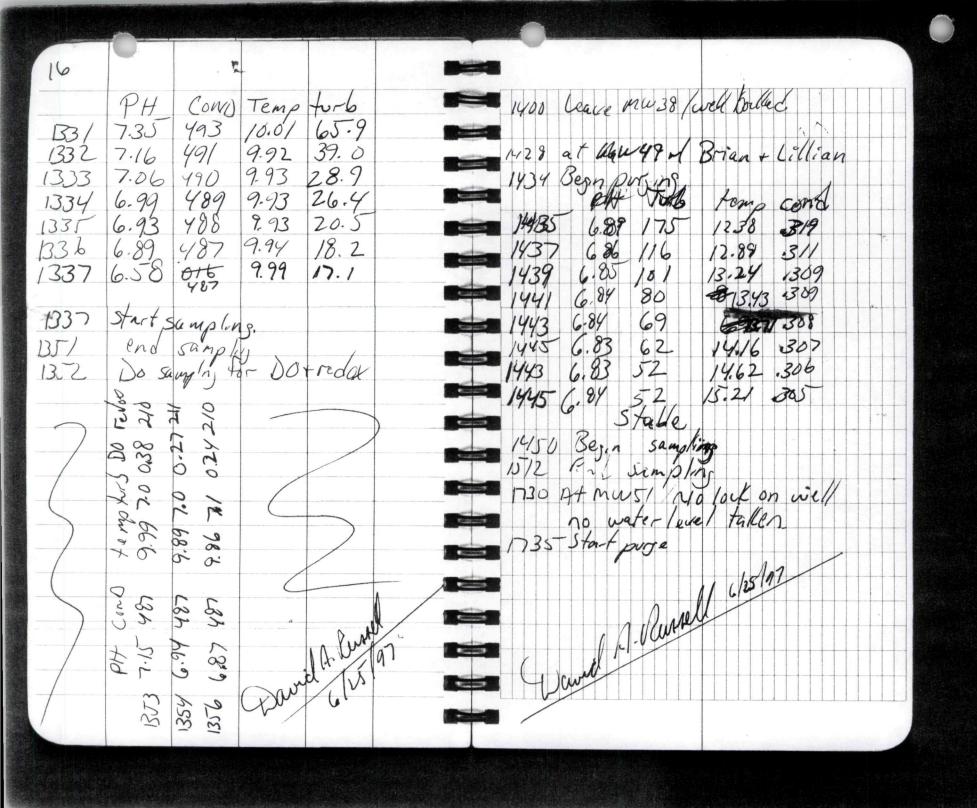
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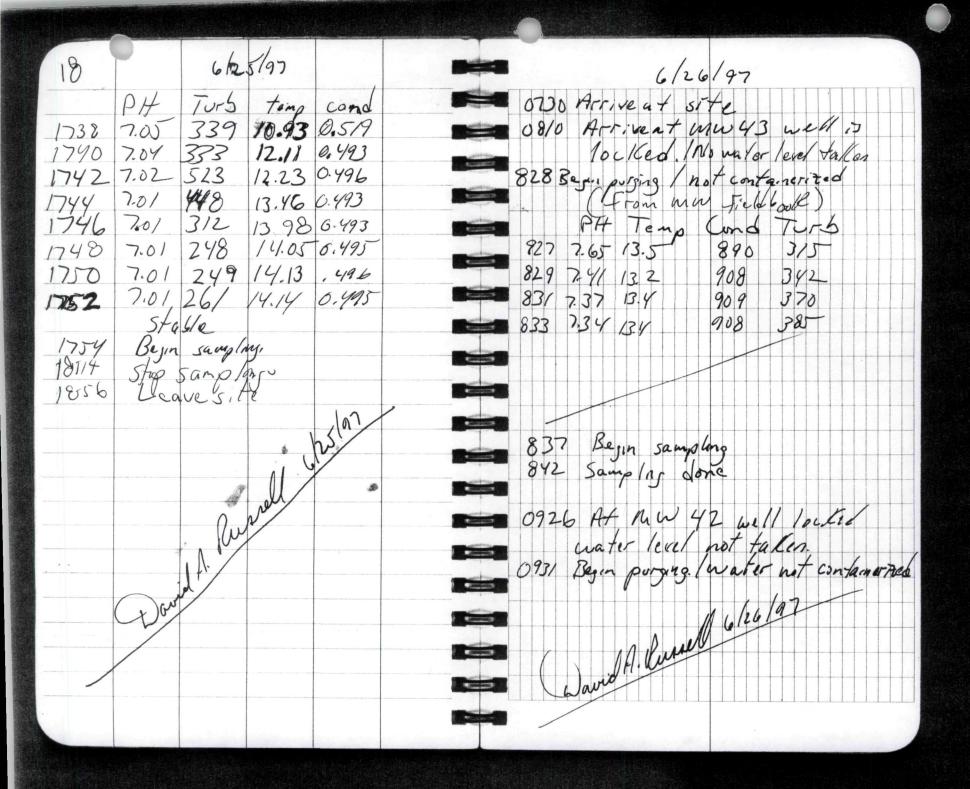
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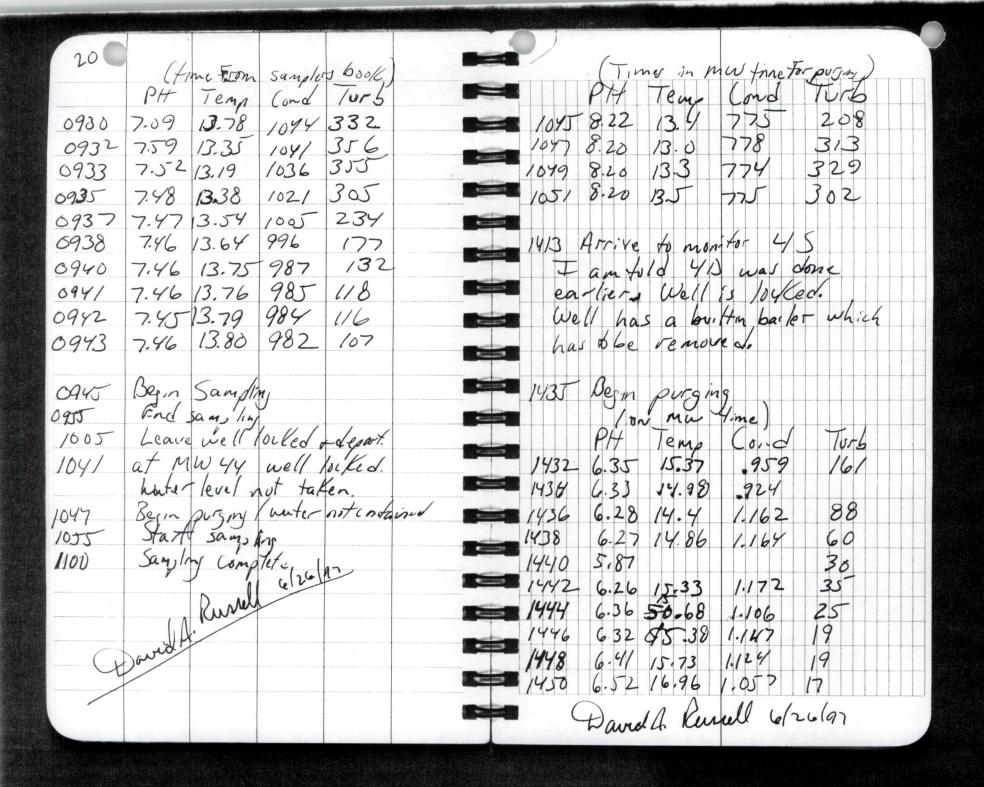
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						1	1616		6.56	.158	12-80	171
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1132		25.51	.007	6.49	11 0		1624		6.48	.158	4-01	97.0
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₩è	MWZ8	TEMP. C		p#	TURB.		1730		7.43	-007	28.31	14-7
1428		31-57	0.006	1	12.0		1732		7.35	-006	28-19	148
1431		31-26	0.006		12.3		1735	59	mpk	collecte	4	
14 33		31.11	0.006	7.63	12.5		10-25	Bal	left	81/0		
1435		30.97	0.006	7.58	11.5							
1437		30.77	0.006		13.8							
1439	V		0,006		14.6							
	Sample	collected	@ 14	40	,							
					, /							
				B-1	bet.						155	15
		0		paul						x.**	1	1

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0745	0 1	arrivcel	site				Nesta	ier: sun	14 7	05	
	Weath	jari par	they old	udy	705						
	WELLH	pH	CON	TEMP	TURB		Well #	t PH	CON .	TEMP	TURB
0912	MW 37	6.84	0.007	22.57	13.0	0828	MXVIS	8.26	0.004	25.67	13./
0914		6.78	0.007	22.48	13.1	0830		7.15	004	24.63	13. 1
0916	1	6.47	0.007	22.40	13.0	0832		6.26	.004	23.73	12.6
9920		Sample	college	d.		0834		5.77	,005	23.33	13.3
1030	MW17	2.55	0.007	24.83	13.0	0836		5.40	.005	23.25	13.7
032	15	7.42	-006	24.88	13.3	0838		5.23	-005	23.03	13.7
034	15	7-34	.006	24-90	13.4	0840	1	5.230%	-005	22.84	13.7
036	V15	7.23	2006	24-91	135	0805	5	gapk a	ollected	(Split	
1040	5	Fample	collect	ed Split	with dup.		MW2	s			
1405	MW18	8.24	0.005	34.68	13.4	\$ 1000	Mw2	5 6.84	0.331	15.27	2233
1407		8.15	.006	34.45	,	1001		6.84	13/3	17.2	3 2400
1409		8.07	-005	34.20	13.5	1663		6.85	30	7 17. 79	
411		8.04,	.006	33.98	13,4	1005		6.86	- 30	5 18.1	7 183
1415		umple	collecte	ed (SP	plit)'	1007		6.87	. 30	\$ 18.0	45 182
	MW18/R	DOXY.	CON	TEMP	TURB / 00	1000	V	6.88	. 30	8 18.6	1 171
1444	MWIS REPOR	7-22	0.005	29.85	13.8/7.07	1010	- 9	sample	collecte		
446	301	7.15	0.005	29.57	13.9/6.971		3				
1448	303	7.10	0.005	27.37	13.9 /6.94						
1720.	Be	al lef	site								
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7 77 nu	THE PURIOUS	Guerra and	he a great	T. Petri	L	TO THE STATE OF TH			Tree services	Dilkill course to any	The second secon

Was and Markey

Cont The BV mont without & Done R. Cate 16-24-77 justial (mr-46 - Carton - Jell, Justin Depart Hotel ul 0715 jeans Jun-11 - Rob L. - Brian, Lilling David Russell But SO - But - Clife, Journ 0745 Arrive at ACS six-Propose sample 0800 note teams - 11 change continues, determine EPA spirt locations Health & Sately meeting (hopping) conte. 10:50 masilize = 2. upment do mn-76 Roserfed in 9:00 wetlands , west of EPA SPLITS: Acs freiting 11:10 Set if at win - 46 - 28.5 Landfull Upper | Lours uf Dave Kissell, Bl will Aquien Aruka Jeff Ramsby m-n Judy Knich , m-n m-15 min-12 mw-100 mu 1/6 m-25 mw.51 Begin Hirge m-395 nw-53 nw-11 ma-36 Wate . See Prive Rissell m-405 mu 15 pd, and ...t., temp, turbility. m-55 ルレナンハ MW-23 m-4 P mn-38 mn-18 Lan-ther pringe vizor mi/nin plus Dauplant. D a Alac 1 ms/ms0 for sample flow is 2 ringates reduced to L 200 million # Trip Blank pier sor. per suping sop. 11:30 Collast m4-46 for payor

C. f. 2/21/11 Judan 6/24/21 Note pH [and Est of mon continus temp prob. (500 mobilize to mu-23 (triple volume) 5:32 7.21 1160 11.4 247 5:34 7.1 1151 11.5 230 (Lower agirtes) 5:36 11.9 7-60 210 1142 5:28 204 1142 7.09 12.2 Franklers stable 15:25 Collect mu-27 19:00 Hely S. Wrkender pack 16:00 mont. onkan personal Sumples of de presunt C. Holm & D. Russell sat. ATV stuck in mid & must be p stry w/ samples set in-shek to main from custady 1 most for Fed- Ex 19:25 fed - en arriver - decon sampling eg up ment 20:05 D. Rissell and C. Helm Tell get stack again Depart Site. 17:00 modilise to mu-24 17:45. Collect mu- 24 hovern. me mill still record

Carte 6/25/97 6/25/97 of Wel Dopant Hotel for ACS 0645 975 Due to eripment problems, with Done Russell Slivery well down time Arrive at site propone but need: For split sampling Mark Destier, Herdentel David overview 5 mm-21 Garnett Mc Gardy Johnny Edwards Coparitor (Not an Epasplit) C. Helm Sunthes to Scam splil 3-4 due to nonrelate of spool inside Hts marking for Tost pot trenches speck box sust south of Railward tracks exemption In a Hendance ·m·u Pms: SAOH due to 13 feed 11:00 LCC Gross, QALQC + Ha Safety multiple drums (fell) Ton Blair, PE, Test pot P.M burited, we don's sent Sungit Ahus - sitt Jechnica Some v. conteminated Att & S air mounts hundreds of drums Also on site: Air sampling is conducted midwet motorial Strings is contracted oversight bein - U-Shape - NEslage Are Kallow excupating to. to allow drainage back int hale who will dis dest puts per undients Handlery Steve Field , midness Pm Don Spence, Ka Durk oper.

6 festar of when 6/25/17 c/ Mel SA 05 15 9.5 615 Digital photos tires, berlap, wine, wood video takus by mondamen hadran 13:55 Ben July disitel photos personnel. Summit of SA DS - No vide type Ahrin pulos an mou benzene & vinyl charide AT 9.0 615, No more diagram takes. debris - just full dird Positive hits and excuration stops for super recorded Mone to wit Rocation of work, AT SA-05, basin Into dead pid 13:30 lock horing, no cour we ned more 6 mil plasdic Need man plastic midnest lopen to perchase Sumant moves the Some more visqueenback grand Summa consten for control sample (Tespit #5) AT Sap, NEw day pound 14:20 Suma = 5 gal, meg present west of Reder Rd 3 may vaccion regulated over as stated in make 16 intersection. HTI uses 2 panels insented be close ~ 16 / 32p in pay slowy thendhas were plan. - at 6.0 (415 only This is barrion municipal mish und station. iocution 9+00. Len countered -

2 6/23/97 c/ Well 6/25/97 c/ when 1440 At Test At #1 60% fell dams A. hydrojet steel bur hill help insertion of prul approx. 75 Druns tudo empty into the along conting 2 panel & span
approximately 13.5' 12/6/5 sandhit, excuention carson more in fact Then breaked drumsin TP+4 toluen bowl himeral spirits 1620 thigh prossure with slowing is pumped into hydrosot clear ink ligs insertion saying. some impty downing 1730 After Samuel attempts, HII has cuit Sheri Brunchin EPA sicus with pinel 1510 in sentian to p-doste her work temporary ce 1200 18:15 Redon to Transment Brilding de assist sample packing and Pand inscrition it sint 1900 hard for Fed Ex bruk 15:45 at squiper wall alignment station with Pine Russell Proud is atiched to pour to site deportin The way metal sprie.

6/26/97 Conte viler c(26/47 cquite O low brine on site Note: a 1 larger of Sumant places clay was encountered. SummA Somplers placed (2) Edour on I top of down borish 0750 Tant pit 2, 5AOZ gordient a (Not notions) henryoil in sand drums - PCB(?) accounting boyins OVA (PID rendens hish Steve, Somant, don on site midwest mit denger tibe texter is oursight 3 bein formed but some plashe laid out interference is possible. begins pit digging Note: That vingl chloride take also positive wood & next debris, Then A comple times were dums - It of one ado ancount in wordsoney hatson cherrs ette p.d (sh-uz). Mont-Les Hourendings

16 30 ppm du www

vivil ne du met antents untson stops front de conselt unin Porte Vorst. He will be here Hora Tech The latter play or lister don a tem neros from del school Las (Collegen Pel) 101 515 now dams Cacross from bondanite slovey many drows - clear liquids niving strition), en countered. They me vising 79 Extrina welding 5 ystem - best basal.

-26-27 c g rifely 6/26/97 c 1 ndely 10 15 Notice many Sorred dress N Test Pits (SA-) 1.30 Spent to Peto Vest: 4 Frans Tours & m- in decine monicipal on 6/2\$ to just strap the top 01 \$A-03, Tre 1200 Hex pit to determine M top - of draws 15 proces Transtop. This 6/25 will hand the emission of Vac upors and decrees danger of pit sounitin lits will be commend to placed if action level 1105 After SA + 2 covered with Hazard Hape points plastic weighted down with (use HVM for detection) der an-wy indust untered retested for bunzone a or other PID amlith unyl chlorish - resiting ho 45. at rellow another type.

6-20-91 c) Well conde 6-164017 Begin to sampe Treat Pit #3, SA 3 promiters HTI has been dissin out eap served doz Kennel drums (full), excavatrum of prival at son tron strps - shallow pit closed Positive confirmation - No need to de, say full. visit Burner usel station Billet Test will be 1110 4 +70 , repins still conducted concernantly with pund insention Call Sheri to sporte her Hydrophilic tape also 1300 insorted in hork & some com. Ha e wal aldread sorry dop of her porch (S: broden she is eparal open ov to unsure puper dipor manyaming watsom -ill amil her degeld photos of prival per clasive. how has Don value there 1330 times the wir me alimby 15 or Don is filling in all down removed in SA 5 , so test pits An HES rensons. Focus may use it to shoke and Pit 5 is to be left open for transfilly study for fibre 1 sifting to be conducted at moteral's Handling. another dina - Not Mis week

6-26-17 a) while 6-26-22 Typela 15:30 HTI Repair at split nem slurry mixing soltion is almost complate All but pt filed in (2005) 1553 1910 sorth of RR Tracks at Colifor Rd. :600 not prevented.
Reprin mist se conducted west west. mosilize to mu loc 16.30 to alled the last EPA split sample Low flow purge & sample Collact Mh -10C 17.10 (cond temp) 346 384 7.74 823 13.74 13.24 811 379 800 380 1329

c 1 the 6-27-97 Deput Hotel 0715 Arrive at ACS side. 0800 crossel the melions trides last night Cell Show Birnory, For Pt, 100 to discuss using the fill around me so- Hwall 1330 This dirt originatel onsite She will need to Pd. others at EPA. I nest ched Sports Manyament Plan. 91 100 11:15 mast removal and must repositioning occurs at barrier wall 5 totions 0, 1, 2.

6-27-17 c/Her 6-27-27 C/Mer next in Ban 1400 to discuss a few issues Dissing inside the ACS fence That Steve mokules observed on 6/26, with a small front and loader his reply: either ships of ACS personnel to expose leaking unto line attich occurred during barrier nell transhing or beth. nowny soll amound - His not occurred except with the Any sposis relocation need EPA appoint-

or well 7-7-22 C) Mel つまうークク Report Hotel 0700 Armu at thes site Engineer hutson Srinivas Develapalli conducts a 5 2 + test trutand Plant. Peroxide Comb doz high using dyferent pt s of effluent (9, 10.5, 2.5) 15.75 They hope to increas peroxide degendation of Trant ment Plant Not on line . Recent simple did not pres Ela standards for Pischarge

7-8-77 C1 Hel conter 7-8× 97 0200 side 0800 12:30 reducing law so will he 13:00 ou corton una recentr 10:00 13130 personnel also 11:00 Tank #3

7-9-97 2-8=22 15:30 5h 16:00 0915 10:20 18:10 Deput Site.

7-a-27 gran 7-9-27 c/wh issur (2) Treat about strdy - 2 phose from test pot 05 1400 fasnes of entire area 155me (3) Buried drum ordside Du Sath 1710 edge of Barrien Wall. The postern is a major 975 pipeling load 1800 8 ds 15 feet and this area must 3 stabilized Aired 11:45 Brok on site at Barrier wall 1900 Souton 0 170

7-10-97 cy Well 7=10-11 cy Neh Report Hotel for site 0200 0230 molelye to station 0 + 70 where HTI 0815 diss insert for absure milliand tracks 1500 MAI in saids 10:30 Back panel Air sompper Plant is plumbed into and start ip begins - treated off wind is still being pumped into Baker 1200 Tanks outside Trentment Building. Air stripper is creating 1100 lots - of bubbles - Due to somap prome in drains yesterdy.

7-11-97 C/4/el C/ Hely 1310 0700 0230 Amrike 2400 AA 0830 The fund of two panels begins to be insorbel 1320 0930 bullet that passes That 150 prod sontes 1328 Day Days panel 1015 Sach to De 330 to design the Boot 1,005 10 Panel and 1245 Remobiliza to station bagin de insent Not last panel, Uss-line and bellet dest are used as well as a natar tylt 4> buld 1400 closure (at all y

7-11-77 CTUbel 2 M - 11-97 cyrde 1410 New panel consonation bagins at HTI Fatoracation warehouse n Down trine 1 segins 1 1700 Broke at Barrier Wall location 2 +00 Waid 20,00 1730 Ben and Sheij Branchin grove at 2+00 location to withers closure. (800 Peu parel arrives on flot bad trick, HTI prepares aren for work Don Destree is oversight for us con-puny. 1830 Panel lamarful, bulled dest in place 1900 Use come to aid in lauraine of priel 1905 Billed test pissed land down 25 fee as possist

HORIZONTAL TECHNOLOGIES

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Serving the World's Environmental Needs

7-16-97 0815 Ambe at the site. Purpose of traay's visit is to oversee the Phase 2 materal handling pertation of near SAOA and discover drum. Stake is pounded study. The buried drung in the Offite Containment Area will be The ground to delinente arially deliverted and additional photos UI & 2 of pit test pits will be dug. A Bickoff neitry was held in the PGCS dirt; Strong solvent od treatment building to disruss the activities Midwest and Keldorn will perform the excavation, and to cus will direct the work and allet samples for analysis.
MW will perform air monitory during the work 0915 Sheri Banchir USEPA Chlir From IDEM posite to discuss
the Phase I work plan and their
comments. We wask to the OFCA and meet Paul and Two la (Focus) and walk /falk about the work. y NE, dryns and Soi Solvent smell. Drums appear Go back to PGCS building to discuss comments item by item. Slope downward to N. Encountere 1100 Eventhing is discussed and aproved and the work begins.

and the second (30) stained west of SAOA. Encountered large amount of debrie (tires, metal, etc.) mixed with soil. Black-brown dirt. Hit drums and Prefos 6 and 7 looking Ein pot and at medbris bile. Begin backfilling, Free bleederdrum calcass harging from bucket is leaking. Dig further west to about 10 feet and saw mother drum, Nothing else fruther mest und dieser so backfill trench at 1300. 05 Break for lunch 1400 Buhat PGCS bldg. 1945 Start Trench 5. Approximately
100 feet northeast of SAS.
Excavate large amount of debis
(fives, carpet, metal) with black. 1455 Hit drums at about 10 feet Drum in bucket. Dripping into exception. Strong petioleum smell. Photo 8 looking NE

7-17-97 Onsite. Front loades at Track b. It will lord, soil pile from yesterday out the Viper 120 shaker and collect sample for PCB many, meny Excounter working at KPOI, By all Kappa Payner mildor Excavited Will collect Saucer for rumerous carcasses 0750 Photo B drimpieres remod weight loade with der from KPOI looking south. Strong Solvent smell large amount Those of looking east into 1701 French Capers of crushed drums. Strong smell. Mixed with dark 0820 Begin Trench 7 Mong S Side 401 Drums at 12 inches South of SAOl. Denta formy clear sand debut mixed with soil. Berkfill the trench. Photo 15 looking showing the brokhelong at 0845.

looking SE into the preach Kubbery Trench is moving SW along trench path to explore for novedum Tench 6. Exampler moves over by vench 8 to look for meterial Send of drum area. will be collected from this excustion location). Operator upgrade Level BPPE and Sangles Poss Level B PPE to ollat Sample from \$402 Begin Sangling liquids from AOZ pit Photo 22 looking wal from Kpoj pit is brought to shaker for screening compositing coil samply mixing black soil with

west and hit drams right away Mark drawn location and move about 150 feet solets to next trench, which will be last one on the west side of elevated down burial area. 1600 Begin mousy surfacementarial away before trenching Begin Trench 10. large amount of metal and carpet debus, including chain link fercing, tires rench & counts as metal car bungers, etc. 610 Photo 24 looking Wat Trend 10 hit drums, no liquids, lot of soil and denis. Druns at about 6 feet deep. Cocation about 200 feet NW of SAOI. person untimes to dig deeper to 12-14 feet to look for more draws Strong Solvent odor. No drums. Britishy excavation. Begin Trench 11. Located due East of SAO. H. Fdrum at about 2 feet below ground Keep hitting draws and along

38 SIML 7-18-97 0710 Onsite. Begu Trevel 13 ud SAOZ Found druing located in the middle the and that leads part the UA manage-ment area. Encountered drives nem with black ligning at 3 feet it about 2 feet bys. Approx. 100 feet Not Trench 11. Atter short break, continue Truck Paul collect 5: gallon bucket of Soil from the execution that Suther east. Found limit of was opened in next to Trench 0805 More back real SAO4 to Crew begins cleans Further delineate drums, Begin Trench 14 at top of drums
near UA management area about
75 feet SE of SAO4.
Front and loader is screening debis from large spoil pile breated at the SE corder of the site. Location SPOI and SPO2. Operator indicates Stong oder to the material 0845 Back by SAOI to wellet colored naterial, which was be morganic Solists. End green purple, yellow 0915 Spot tranching done in between

7-30-97 Amreat site. Parpose of to days vint is to observe the beginning of the MW-9 investigation Today Midwest Dewstering is onsite to install 2 monitoring wells adjacent to MW-9 2945 Heffer safety meeting and equipment decon crew which is south of treatment building and west of ACS Fenced plant, North of RR 1030 Welly patalled 1115 leave to site

Amore at site. Purpose of odays visit is to collect sediment uples to support the verision to The Baseline Risk Assersment.
Samples will be analyed for
PCBs TOC and SVOCS.
Southwest Lab of OK will PCB and Svoc Region 5 CRL will the TOC sansles. 830 Begin labelling sangle fars and writing out the traffic regort. eather about 65° usual from yorth, cloudy. 00 Sheri Bianchin USEPA arrives. discus sangle locations and the MW SOP. Dane Pehiman BUSPC, arrives to collect the samples and walk the site for the discrete soil Samples. 1200 Back to treatment bldg Break to go to lynch. Sheri leaves. 1300 Begin sanching. Go to STO! At ditch south of Grand Trund





Proj. #: 71670

Roll: 1 Photo #: 1
Date: 6-24-97 Time: 1105
Photographer: Carter Helm

Description: West view of Upper Aquifer monitoring well MW-46 during well purging. New teflon tubing was used to purge and

sample all monitoring wells during the quarterly sampling. Heavy rains created swamp-like conditions in the wetlands

west of the ACS site.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 2
Date: 6-24-97 Time: 1125
Photographer: Carter Helm

Description: Montgomery Watson sampling personnel utilized a Grundfos

pump powered by a generator to purge and sample ACS-related monitoring wells. Low-flow techniques were utilized.

Groundwater parameters such as pH, conductivity,

temperature, and turbidity were noted, and when stable, the

groundwater sample was collected.





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 1 Photo #: 3 Date: 6-24-97 Time: 1130 Photographer: Carter Helm

Description:

Montgomery Watson sampling personnel collect the VOA samples first (at MW-46), the sampling flow rate was reduced to < 200 milliliters per minute (ml/min) from a purge rate of approximately 200 ml/min.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #:4 Roll: 1 Date: 6-25-97 Time: 1100 Carter Helm Photographer:

Description:

North view of test pit Number 4 (Soil Area location 4, or SA-04). Multiple drums were unearthed. These buried

drums were full.





Proj. #: 71670

Description:

Photo #: 5 Roll: 6-25-97 Time: 1105 Date:

Photographer:

Carter Helm Northwest view of SA-04. Test pit debris, soils, drums, etc.

were placed on heavy 6-mil visqueen as directed by the

Pretreatment/Materials Handling Study Plan. Many drums

were breached during excavation.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 6 Date: 6-25-97 Time: 1108 Photographer: Carter Helm

Description:

West view of damaged drums unearthed from the test pit of

SA-04. Strong odor and high PID readings limited Black & Veatch photographs to be taken only upwind of test pits.





Proj. #: 71670

Roll: 1 Photo #: 7
Date: 6-25-97 Time: 1110
Photographer: Carter Helm

Photographer: Description:

North view of SA-04. A pool of liquid contaminants

collected at the bottom of the test pit due to drum damaging

during excavation.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 8
Date: 6-25-97 Time: 1115
Photographer: Carter Helm

Description: Fol

Following the Materials Handling Plan, FOCUS Environmental, Midwest Material Services, and Kaldorn

Excavating Company personnel placed all test pit

debris/contents on visqueen to allow drainage back into the

test pit.





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 1 Photo #: 9

Date: 6-25-97 Time: 1300

Photographer:

Carter Helm

Description:

Following the Health & Safety Plan, Montgomery Watson,

Air Monitor Sumant Ahuja, places Summa canisters upwind and downwind of test pit excavations. These negative pressure vacuum regulated canisters "collected" air over an

8-hour period.

American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #:10

Date: 6-25-97 Time: 1335 Photographer: Carter Helm

Description:

The second test pit to be excavated was in Soil Area

Location 5, (SA-05), approximately 180 feet west of SA-04. Total depth of SA-05 was 9.5 feet below land surface (bls).





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 11 Roll: 1 Date: 6-25-97 Time: 1350

Photographer:

Carter Helm

Description:

SA-05 revealed municipal trash such as tires, burlap, wood debris, plastic and metal debris. Drum burial did not extend

this far west.

American Chemical Services, Inc. RD/ERA

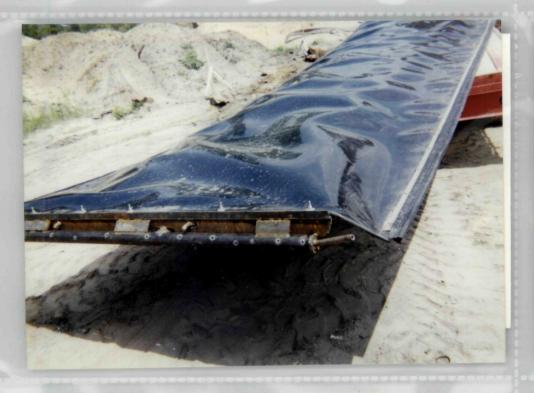
Proj. #: 71670

Roll: 1 Photo #: 12 Date: 6-25-97 Time: 1420 Photographer: Carter Helm

Description:

South view of Barrier Wall gap located at station 9 + 00. Horizontal Technologies, Inc. (HTI) personnel have been digging soils around the 13-foot gap to allow easy placement

of poly (HDPE) panels.





Proj. #: 71670

Photo #: 13 Roll: 6-25-97 Time: 1420 Date:

Carter Helm Photographer:

Close-up view of the bottom of one of two panels to be Description: placed in Barrier Wall gap located at station 9 + 00. Note

the water jet bar w/holes which will help placement of panel by jetting through the mud and slurry to reach the top-of-

clay for proper closure.

American Chemical Services, Inc. RD/ERA Site: Proj. #: 71670

Roll: 1 Photo #:14 Date: 6-25-97 Time: 1445 Photographer: Carter Helm

Description:

The third test pit excavated was at Soil Area location 01. Approximately 75 drums were unearthed. Approximately

60% of the drums were full of liquid and sludges.





Proj. #: 71670

Roll: 1 Photo #: 15
Date: 6-25-97 Time: 1455
Photographer: Carter Helm

Description: Close-up view of Test Pit Number 01. At 12.0 feet bls,

excavation ceased due to the backhoe reaching the natural

sand layer.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 16
Date: 6-25-97 Time: 1500
Photographer: Carter Helm

Description:

A white paint sludge oozed from a breached drum during the

excavation of SA-01.





Proj. #: 71670

Roll: 1 Photo #: 17

Date: 6-25-97 Time: 1550

Photographer:

Carter Helm

Description: A back view of th

A back view of the panel to be inserted at the Barrier Wall gap at station 9 + 00. The metal "spine" will be released and removed once the panel is in place (into the confining clay layer) approximately 29' bls. The jet bar will remain at

the bottom of the panel seated in clay.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 18

Date: 6-25-97 Time: 1551

Photographer: Carter Helm

Description: A frontal view of the panel to be inserted at the Barrier Wall

gap at Station 9 + 00.





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 1 Photo #: 19 Date: 6-25-97 Time: 1620 Carter Helm Photographer:

The water jet sprayers are turned on prior to insertion of the Description:

panel. This jetting action helps glide the panel into place

during the lowering process.

American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 20 Date: 6-26-97 Time: 830 Photographer: Carter Helm

Description: Montgomery Watson and Midwest Materials Services personnel monitor the air with a photoionizing device and

drager tubes. Positive tests for benzene and vinyl chloride

were noted at Test Pit Number 2 (SA-02).





Proj. #: 71670

Roll: 1 Photo #: 21
Date: 6-26-97 Time: 850
Photographer: Carter Helm

Description:

East view of SA-02 excavation. All material was placed on

plastic and allowed to drain back into the pit.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

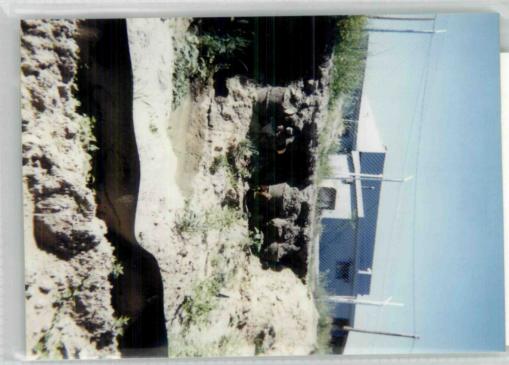
Roll: 1 Photo #: 22
Date: 6-26-97 Time: 910
Photographer: Carter Helm

Description:

A tire and drums were among the unearthed materials

extracted from SA-02.





Proj. #: 71670

Roll: 1 Photo #: 23
Date: 6-26-97 Time: 920
Photographer: Carter Helm

Description: East view of string, drums, and wood debris removed from

SA-02.

Site: American Chemical Services, Inc. RD/ERA

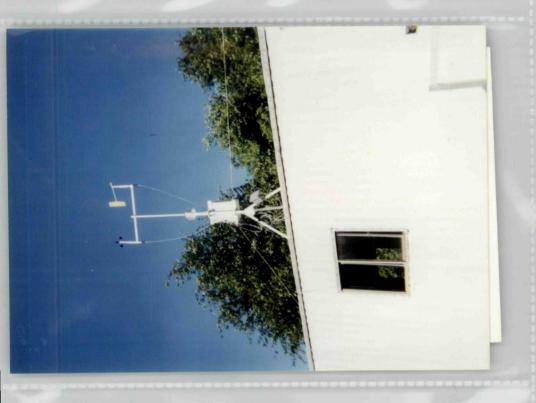
Proj. #: 71670

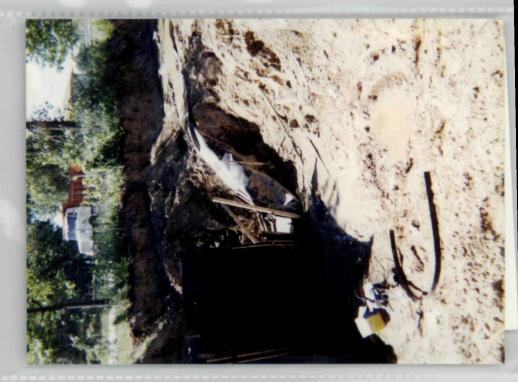
Roll: 1 Photo #: 24
Date: 6-26-97 Time: 1030
Photographer: Carter Helm

Description: South view of buried drums located outside the Barrier Wall

between stations 10 and 12. The building beyond the fence

is the City of Griffin Dog Pound.





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 25 Roll: 1 Date: 6-26-97 Time: 1100 Carter Helm Photographer:

Description:

The weather station located above the HTI trailer, located

approximately 400 feet northeast of the test pit locations. A daily log was maintained of weather conditions during test

pit excavation.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 1 Photo #: 26 Date: 6-26-97 Time: 1110 Photographer: Carter Helm

Description: An east view of Barrier Wall gap located at Station 4 + 70.

An extrusion heat welder was used to close the gap above

land surface.





Proj. #: 71670

Roll: 2 Photo #: 27 Date: 6-26-97 Time: 1115 Photographer: Carter Helm

Description:

Test pit SA-02 is covered with 6 mil plastic due to positive air sampling screening results. The plastic acted as a barrier to prevent VOC vapors from migrating off-site.

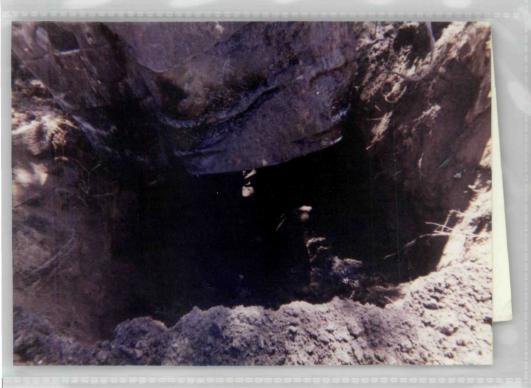
American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 28 Roll: 2 Date: 6-26-97 Time: 1215 Carter Helm Photographer:

Montgomery Watson personnel determined that the last test Description: pit, SA-03, should be surficially scraped, not dug, to

determine if drums are buried at this location. This could prevent the escape of excessive VOC vapors unnecessarily.





Proj. #: 71670

Roll: 2 Photo #: 29 Date: 6-26-97 Time: 1230

Photographer:

Carter Helm

Description:

The SA-03 excavation encountered full drums, one of which was buried approximately 3 feet bls. Once positive drum burial identification was made, excavation ceased. Later in

burial identification was made, excavation ceased. Later in the day all test pits were back-filled with the exception of

SA-05.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 2 Photo #: 30
Date: 6-26-97 Time: 1330
Photographer: Carter Helm

Description: East view of Barrier Wall gap located at Station 9 + 00.

Rocks, mud, slurry, and formation materials are being

removed prior to panel insertion.





American Chemical Services, Inc. RD/ERA Proj. #: 71670

Roll: 2 Photo #: 31 Date: 6-26-97 Time: 1350 Photographer: Carter Helm

Description:

The first of 2 panels is being prepared for insertion at Station

9 + 00 location.

American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Photo #: 32 Roll: 2 Date: 6-26-97 Time: 1430 Photographer:

Hydrojetting begins just prior to lowering the panel, and continues until the panel is seated in the confining clay layer. Description:





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

2 Roll: Photo #: 33 Date: 6-26-97 Time: 1440 Photographer: Carter Helm

Description: Panel insertion continues to close the gap at Station 9 + 00.

A hook and groove zipper-like seam is used to secure the

panel to one edge of the existing Barrier Wall.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 2 Photo #: 34 Date: 6-26-97 Time: 1500 Photographer: Carter Helm Description:

Panel insertion is almost complete. Survey equipment is used to ensure the panel is seated in the confining layer of clay. The surveyor measures the elevation of the top-ofpanel with respect to the known elevation of the top of the clay and the actual length of the panel.





American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 35 Roll: 2 Date: 6-26-97 Time: 1600 Carter Helm Photographer:

Description:

Four out of the five test pits are filled in with the material (drums) that was removed along with some top soil.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 36 Roll: 2 Date: 6-26-97 Time: 1600 Photographer:

Description:

West view of debris removed from test pit 05 (SA-05). Three additional volumes of municipal refuse were removed from SA-05 to accommodate the Pretreatment/Materials

Handling Study.





Proj. #: 71670

Roll: 2 Photo #: 37 Date: 6-26-97 Time: 1610 Photographer: Carter Helm

Description:

An extrusion welder is used by HTI personnel to seal above ground gaps in the poly (HDPE) wall at Station 4 + 70.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 2 Photo #: 38

Date: 6-26-97 Time: 1620 Photographer:

Carter Helm Description:

HTI trenching resumes just south of the railroad tracks.





Proj. #: 71670

Roll: 2 Photo #: 39
Date: 6-26-97 Time: 1630
Photographer: Carter Helm

Description: Lower aquifer well MW-10C, an EPA split sample, is purged

using the Grundfos pump and low flow techniques as specified in the Revised SOP for the ACS facility.

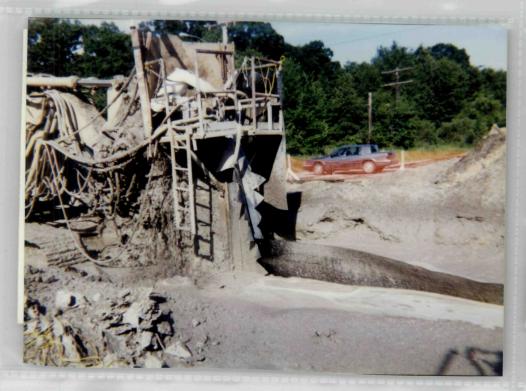
Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 2 Photo #: 40
Date: 6-26-97 Time: 1710
Photographer: Carter Helm

Description: After purging and parameter stability, Montgomery Watson

personnel collect VOA samples from MW-10C.





Proj. #: 71670

Roll: 2 Photo #: 41 Date: 6-27-97 Time: 800 Photographer:

Carter Helm

Description: East view of HTI equipment trenching, and laying poly (HDPE) within the bentonite slurry wall across the railroad

tracks located near the ACS facility office.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 2 Photo #: 42 Date: 6-27-97 Time: 1330 Photographer: Carter Helm

Description: Southern view of Barrier Wall gap and ripped west seam at

Station 11 + 75.





Proj. #: 71670

Roll: 2 Photo #: 43 Date: 6-27-97 Time: 1350 Carter Helm Photographer:

Description: South view of the completed panel closure at Station 9 + 00. Both panels are attached to the Barrier Wall and seated in

the clay layer.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 44 Roll: 2 Date: 6-27-97 Time: 1430 Carter Helm Photographer:

"Mats" which are composed of bound railroad ties were Description: placed down in areas of soft soil so the trencher's track

wheels would not sink and be mobile in order to lay poly

(HDPE) sheeting.





Proj. #: 71670

Roll: 2 Photo #: 45 Date: 6-27-97 Time: 1520 Photographer: Carter Helm

Description: A close-up view of the mangled west seam at the Barrier

Wall gap located at Station 11 + 75. A backhoe is used to remove solids from the area so repairs can commence.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 2 Photo #: 46 Date: 6-27-97 Time: 1645 Photographer: Carter Helm

North view inside the ACS facility where ACS workers were Description:

repairing a faulty water line.





Proj. #: 71670

Roll: 2 Photo #: 47 Date: 6-27-97 Time: 1700 Carter Helm Photographer:

Description: The Baker tank (on the right) was used to store effluent from

the treatment plant after replacing carbon filters. Effluent must meet EPA standards prior to discharge to the wetlands. High levels of 1, 1-DCA, methyl chloride, and vinyl chloride were noted in the effluent prior to carbon filter replacement.

Site: American Chemical Services, Inc. RD/ERA Proj. #: 71670

Roll: 2 Photo #: 48 Date: 6-27-97 Time: 1740 Photographer: Carter Helm Description:

South view of old storage tanks which were cut up and flattened by ACS employees to lay across the top of the HDPE Barrier Wall. These thick metal plates will hopefully prevent any potential damage to the Barrier Wall by heavy tanker trucks which traverse the ACS site.





Proj. #: 71670

Roll: 3 Photo #: 49
Date: 6-10-97 Time: 1300
Photographer: Steve Mrkvicka

Description:

Looking south at P107 (foreground) and P108. Piezometers installed on either side of the Barrier Wall, along northern

side.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 3 Photo #: 50
Date: 6-10-97 Time: 1300
Photographer: Steve Mrkvicka

Description: Looking south at P107 (foreground) and P108. Piezometers

installed on either side of the Barrier Wall, along northern

side.





Steve Mrkvicka

Proj. #: 71670

Roll: 3 Photo #: 51 Date: 6-10-97 Time: 1305

Photographer: Description:

Looking west at P93 (background) and P94 at northwestern

side of Barrier Wall, near PGCS treatment building.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 3 Photo #: 52
Date: 6-10-97 Time: 1305
Photographer: Steve Mrkvicka

Description: Looking west at P93 (background) and P94 at northwestern

side of Barrier Wall, near PGCS treatment building.





Proj. #: 71670

Roll: 3 Photo #: 53
Date: 6-10-97 Time: 1313
Photographer: Steve Mrkvicka

Description: Looking west at Pi

Looking west at P100 (foreground) and P99. Griffith

Landfill in background. Large drill rig in background on the
landfill - activity is unknown. At southwestern area of the

Barrier Wall.

Site: American Chemical Services, Inc. RD/ERA

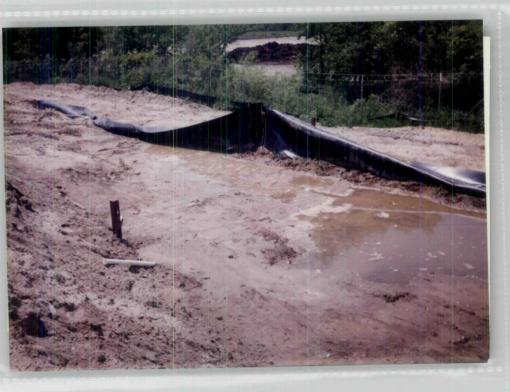
Proj. #: 71670

Roll: 3 Photo #: 54
Date: 6-10-97 Time: 1313
Photographer: Steve Mrkvicka

Description: Looking west at P100 (foreground) and P99. Griffith

Landfill in background. Large drill rig in background on the landfill - activity is unknown. At southwestern area of the

Barrier Wall.





Proj. #: 71670

Photo #: 55 Roll: 3 6-10-97 Time: 1317 Date: Steve Mrkvicka

Photographer:

Looking southwest at P98 (foreground) and P97. The Description:

Barrier Wall lies in between the piezometers. Active part of Griffith Landfill in background. Photo taken at southwestern

side of the Barrier Wall alignment.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 56 Roll: 3 Date: 6-10-97 Time: 1321 Steve Mrkvicka Photographer:

Looking north and northeast at P95 (foreground) and P96. Description: The Barrier Wall lies in between the piezometers. Location

is south of the railroad tracks near the Griffith Landfill.





Proj. #: 71670

Photo #: 57 Roll: 3

Date: 6-10-97 Time: 1321

Steve Mrkvicka Photographer:

Looking north and northeast at P95 (foreground) and P96. Description:

Barrier Wall in between the piezometers. South of the

railroad tracks near the Griffith Landfill.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 3 Photo #: 58

Date: 7-7-97 Time: 830

Photographer: Carter Helm

Description: Montgomery Watson Engineer, Srinivas Devulapalli,

conducts a jar test at the treatment building. Montgomery Watson desires to increase the degradation rate of peroxide in the effluent. Effluent with differing pH's undergo this test

to determine what pH level offers an optimum (high)

peroxide degradation rate.





Proj. #: 71670

Roll: 3 Photo #: 59
Date: 7-7-97 Time: 910
Photographer: Carter Helm

Description: This instrument measured pH and peroxide levels every 15

minutes during the effluent jar test.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 3 Photo #: 60
Date: 7-7-97 Time: 1520
Photographer: Carter Helm

Description: East view of panel placement at the Barrier Wall gap located

at Station 4 + 70.





Proj. #: 71670

Photo #: 61 Roll: 3 Date: 7-8-97 Time: 0812 Carter Helm Photographer:

This used low-profile air stripper will be installed in the Description:

treatment building to reduce levels of the methylene chloride concentration in the treatment process to increase carbon

filter longevity.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 3 Photo #: 62 Date: 7-8-97 Time: 1110 Photographer: Carter Helm Description:

East view of the last of 3 panels used during closure of the

Barrier Wall gap located at Station 4 + 70.





Proj. #: 71670

Roll: 3 Photo #: 63
Date: 7-8-97 Time: 1200
Photographer: Carter Helm

Description: East view of panel insertion at the Barrier Wall gap located

at Station 4 + 70. A bullet test is used to assure HTI crew members that the hook and groove connection system are ontrack. Hydrophilic tape was also used in seams and in the

hook and groove connections.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 3 Photo #: 64
Date: 7-8-97 Time: 1310
Photographer: Carter Helm

Description:

Large 500-foot rolls of HDPE arrive at the HTI warehouse where HTI workers will spool only 40 to 100 feet of HDPE

for use in the trencher box.





Proj. #: 71670

Photo #: 65 Roll: 3 Date: 7-8-97 Time: 1315 Carter Helm

Photographer:

Description: The clothespin device used by HTI personnel to create a

seam with either a hook or groove, to repair torn or damaged

HDPE seams already in place.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Description:

Roll: 3 Photo #: 66 Date: 7-8-97 Time: 1340 Photographer: Carter Helm

In the HTI warehouse, panels and HDPE spools are

manufactured to specifications determined in the field.





Proj. #: 71670

Roll: 3 Photo #:67
Date: 7-8-97 Time: 1345
Photographer: Carter Helm

Description: Close-up view of the two different seams used to connect

panels or Barrier Wall sections and groove (female-end) on the left and hook (male-end) displayed on the right. Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 3 Photo #: 68
Date: 7-8-97 Time: 1400
Photographer: Carter Helm

Description: These boulders, rocks, and cobbles were removed from the trenching box or cutting teeth after becoming lodged during

the slurry wall portion of the Barrier Wall construction.





Proj. #: 71670

Roll: 3 Photo #: 69 Date: 7-9-97 Time: 1150 Photographer: Carter Helm

Once the panel was hydro-jetted in place, seated in clay, HTI Description:

workers removed the panel's "spine". A northwest view at

Station 0 + 70.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Photo #: 70 Roll: 3 Time: 1600 Date: 7-9-97 Carter Helm Photographer:

Description:

One more panel will complete closure at the Barrier Wall station 0 + 70. A west view just south of the railroad tracks.





Proj. #: 71670

Roll: 3 Photo #: 71 Date: 7-9-97 Time: 1705 Photographer: Carter Helm

A west view of the Station 2 + 00 Gap. One tailor-made panel remains to be installed for complete closure of the Description:

Barrier Wall alignment.

Site: American Chemical Services, Inc. RD/ERA

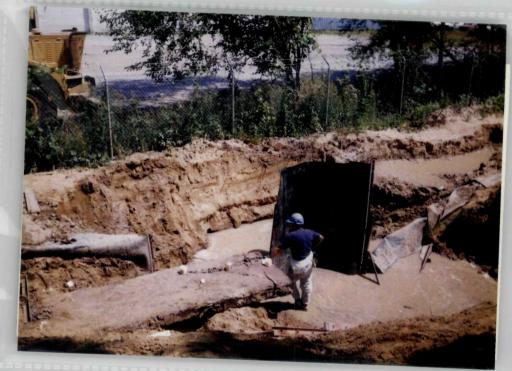
Proj. #: 71670

Roll: 3 Photo #:72 Date: 7-10-97 Time: 1535 Photographer: Carter Helm

A north view of the last panel for Station 0 + 70 gap, just Description:

south of the railroad tracks.





Roll: 3 Photo #: 73 Date: 7-10-97 Time: 1555 Photographer: Carter Helm

Description:

HTI personnel "feed" the panel into the hook & groove connectors while lowering and hydrojetting into the clay. A bullet test is being performed by HTI personnel.

American Chemical Services, Inc. RD/ERA Site: Proj. #: 71670

Roll: 4 Photo #: 74 Date: 7-11-97 Time: 1200 Photographer: Carter Helm Description:

An east view of last remaining closure, at Station 2 + 00. Wood mats have been placed to support heavy machinery

and personnel during panel placement.





Proj. #: 71670

Roll: 4 Photo #: 75 Date: 7-11-97 Time: 1310 Photographer: Carter Helm

Description: East view of the first attempt of complete closure at Barrier Wall Station 2 + 00. HTI personnel use Vasoline to ease the hook and groove connection, and when conducting the bullet

American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Photo #: 76 Roll: 4 Date: 7-11-97 Time: 1312 Photographer: Carter Helm

A north view of closure support equipment such as a Detroit Description:

Diesel engine and pump used for hydrojetting water and slurry (contained in the Baker tank on left). Survey equipment (automatic level) was used to determine the elevation of the panel with respect to clay layer elevation.





Proj. #: 71670

Photo #: 77 Roll: 4

Time: 1320 Date: 7-11 -97

Photographer: Description:

Carter Helm East view of backhoe bucket applying pressure to panel spine to help the hydrojetting and placement of panel into

the clay.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

Roll: 4 Photo #: 78 Date: 7-11-97 Time: 1321

Photographer: Carter Helm

Description: East view of bullet test and hydrophilic joint placement

concurrently ran during panel lowering (at Station 2 + 00).





Proj. #: 71670

Roll: 4 Photo #: 79
Date: 7-11-97 Time: 1330
Photographer: Carter Helm

Description: East view of panel after first attempt of placement at Station

2 + 00. After failure of the bullet test, i.e., hook & groove disconnection, the panel was lifted to reveal extensive

damage.

Site: American Chemical Services, Inc. RD/ERA

Proj. #: 71670

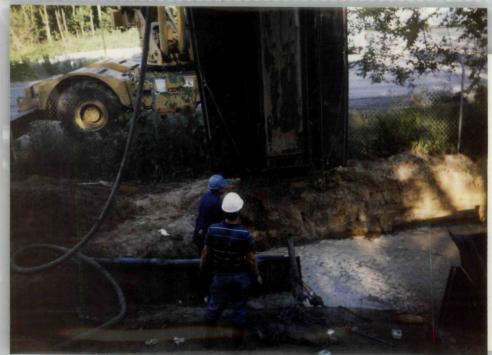
Roll: 4 Photo #: 80
Date: 7-11-97 Time: 1335
Photographer: Carter Helm

Description: HTI personnel survey the damage to the first attempt panel.

Bent seams and ripped material sends the panel back to the

HTI fabrication warehouse to rebuild a new panel.





Proj. #: 71670

Photo #: 81 Roll: 7-11-97 Time: 1337 Date: Photographer: Carter Helm

Description: Another view of the damaged panel as HTI personnel lay

the panel on a flatbed truck for transport to HTI warehouse.

Site: American Chemical Services, Inc. RD/ERA Proj. #: 71670

Roll: 4 Photo #: 82 Date: 7-11-97 Time: 1838 Photographer: Carter Helm Description:

A second attempt of Barrier Wall closure is made at Station 2 + 00. A new panel, modified with a wider lower section to prevent bullet test failure and have proper closure.





Proj. #: 71670

Roll: 4 Photo #: 83 Date: 7-11-97 Time: 1825

Photographer: Carter Helm Description:

East view of gap and panel prior to hydrojetting and lowering. Note the blue cord (for hydrophilic joint placement) and red cord (for bullet test) laying on the wood

mats.

American Chemical Services, Inc. RD/ERA Site:

Proj. #: 71670

Roll: 4 Photo #: 84 Date: 7-11-97 Time: 1905 Photographer: Carter Helm

Description: After passing the bullet test and surveying the top of the

panel to ensure the panel bottom is seated in clay, the panel spine is removed. The ACS Barrier Wall alignment closure

was completed at 1911 on July 11, 1997.



Proj. #: 71670

Roll: 4 Photo #: 85
Date: 7-11-97 Time: 1930
Photographer: Carter Helm

Description: These two pieces of hydrophilic tape or joint material were

the same size. The top piece had soaked in water for 3 days.





Project: 71670 Photo: 1

Date: 7/16/97 Time: 1115

Photographer: Steve Mrkvicka

Description: Looking east at Trench No. 1 located due east of SA03. Crushed drums and dirt in pit. Strong solvent odor.

Site: American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 2

Date: 7/16/97 Time: 1115 Photographer: Steve Mrkvicka

Description: Looking east at Trench No. 1 located due east of SA03.

Crushed drums and dirt in pit. Strong solvent odor.





Project: 71670 Photo: 3

Date: 7/16/97 Time: 1135 Photographer: Steve Mrkvicka

Description:

Looking northeast at Trench No. 2 located north of SA03. Trench is about 6 feet deep. No drums discovered. Large amount of debris mixed with soil and sand.

Site: American Chemical Services, Inc. RD/ERA

Project: 71670

Photo: 4

Date: 7/16/97

Time: 1205 Steve Mrkvicka

Photographer:

Looking northeast at Trench No. 3 located about 50 feet Description: west of SA04. Drums found at 4 feet below ground

surface and soil with solvent smell. Depth of drums slope downward toward the north. Encountered liquid that is

bubbling.





Project: 71670

Photo: 5

Date: 7/16/97

Photographer: Description:

Time: 1205 Steve Mrkvicka

Looking northeast at Trench No. 3 located about 50 feet west of SA04. Drums found at 4 feet below ground surface and soil with solvent smell. Depth of drums slope downward toward the north. Encountered liquid that is bubbling.

Site: American Chemical Services, Inc. RD/ERA Project: 71670

Photo: 6

Date: 7/16/97 Time: 1220

Photographer: Steve Mrkvicka Description:

Looking east into Trench No. 4 located about 100 feet west of SA03. Encountered large amount of stained debris (tires, metal, etc.) mixed with soil (black-brown dirt). Hit drums and liquid at about 4 feet below ground





American Chemical Services. Inc. RD/ERA Project: 71670

Photo: 7

Date: 7/16/97 Time: 1220 Photographer: Steve Mrkvicka Description:

Looking east at debris pile from Trench No. 4 located about 100 feet west of SA03. Encountered large amount of stained debris (tires, metal, etc.) mixed with soil (black-brown dirt). Hit drums and liquid at about 4 feet

Site: American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 8

Date: 7/16/97 Time: 1455

Photographer: Steve Mrkvicka

Description: Looking northeast at Trench No. 5 located about 100 feet

northeast of SA05. Drum hanging from bucket of backhoe. Drums in the trench. Encountered liquid and drums at about 10 feet below ground surface. Strong

petroleum smell.





Project: 71670 Photo: 9

Time: 1455 Date: 7/16/97

Steve Mrkvicka Photographer:

Looking east at Trench No. 5 located about 100 feet northeast of SA05. Drum hanging from bucket of backhoe. Drum is leaking clear liquid into excavation. Description:

American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 10

Date: 7/16/97 Time: 1530 Photographer: Steve Mrkvicka

Description:

Looking southeast at Trench No. 6 located southwest of SA01. Drums found at about 18 inches below ground

surface. Drums are leaking clear and purple liquid.





Project: 71670 Photo: 11

Time: 1530 Date: 7/16/97

Photographer: Steve Mrkvicka

Description:

Looking southeast at Trench No. 6 located southwest of SA01. Drums found at about 18 inches below ground surface. Drums are leaking clear and purple liquid.

Site: American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 12

Date: 7/16/97 Time: 1530 Photographer: Steve Mrkvicka

Description:

Eastward from Trench No. 6. Looking north at drum hanging from bucket. Excavated to about 8 feet below

ground surface.





Project: 71670 Photo: 13

Time: 0750 Date: 7/17/97

Photographer: Steve Mrkvicka

Description:

Looking south at pit KP01, which is located near the former Kapica-Pazmey building. Numerous drum carcasses. Strong solvent smell. Large amount of soil

mixed with drums.

American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 14

Date: 7/17/97 Time: 0750 Photographer: Steve Mrkvicka

Description: Looking east into KP01, which is located near the former

Kapica-Pazmey building. Layers of crushed drums. Strong solvent smell. Mixed with dark soil.





Project: 71670 Photo: 15

Date: 7/17/97 Time: 0845 Photographer: Steve Mrkvicka

Description:

Looking southeast at backfilling of Trench No. 7 located along southern side of SA01.

American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 16

Date: 7/17/97 Time: 0855 Photographer: Steve Mrkvicka

Description:

Looking northeast into Trench No. 8. Drums encountered at about 6 feet below ground surface.





Site: American Chemical Services. Inc. RD/ERA Project: 71670

Photo: 17
Date: 7/17/97 Time: 0855
Photographer: Steve Mrkvicka

Description: Looking northeast into Trench No. 8. Drums encountered at about 6 feet below ground surface.

Site: American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 18

Date: 7/17/97 Time: 0920

Photographer: Steve Mrkvicka Description: Looking norther

Looking northeast. Front-end loader used to load excavated soil onto the screening machine as part of the

excavated soil onto the screening machine as part of the materials handling study. Picture shows loader being

weighed before loading onto the screen.





Project: 71670 Photo: 19 Date: 7/17/97

Time: 0920 Photographer: Steve Mrkvicka

Description:

Looking northeast. Dirt is loaded onto the top of the screen. Large debris is removed from the side of the machine and the finer material is deposited off the

conveyor belt.

American Chemical Services, Inc. RD/ERA Site:

Project: 71670 Photo: 20

Time: 0920 Date: 7/17/97

Steve Mrkvicka Photographer:

Looking northeast. Finer material is deposited off the conveyor belt. Description:





Project: 71670 Photo: 21

Time: Date: 7/17/97 Photographer: Steve Mrkvicka

Description:

Looking southeast into Trench No. 9 located about 100 feet northwest of SA01. Drums are about 3 feet below ground surface. Open drums are leaking clear liquid into the excavation. Rubber material is oozing from one of

the drums.

American Chemical Services, Inc. RD/ERA

Project: 71670

Photo: 22

Time: 1115 Date: 7/17/97

Looking east. Sampling crew is collecting a liquid sample from SA02 pit. Steve Mrkvicka Photographer:

Description:





Project: 71670 Photo: 23

Time: 1415 Date: 7/17/97

Steve Mrkvicka Photographer:

Looking north at SA04 pit. Large amount of broken drums. Grey gelatinous material in foreground. Description:

American Chemical Services, Inc. RD/ERA

Project: 71670 Photo: 24

Date: 7/17/97 Time: 1610

Photographer: Steve Mrkvicka

Description: Looking west at Trench No. 10 located about 200 feet

northwest of SA01. Hit drums but no liquid and a lot of soil and debris. Drums are located at about 6 feet below

ground surface